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ABSTRACT

The paper integrates results from three studies that examined learning disabled (LD) and regular education students' academic responding time in different instructional arrangements: (1) high, middle, and low reading group placement, (2) regular and resource room placement, and (3) special education service level placement. Sixty-nine second-, third-, and fourth-grade regular education and LD students were observed for two consecutive days using a comprehensive 10-second interval time sampling technique to describe the instructional context and student responding for a target student. The nature of instruction and student responding for students in different instructional arrangements was more similar than different. The studies documented the small amount of time spent by all students in active academic responses and the considerable variability that existed between individual students regardless of the instructional placement. Despite differences in the nature of instruction there were no differences in total academic responding time of LD students in the resource room and non-LD students in mainstream classes, for students in high, middle, or low reading groups, or for students in different service delivery levels. Instruction received by LD students in resource rooms and in mainstream classrooms differed in several ways, including the student's active academic response. (Author/CL)

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ACADEMIC RESPONDING TIME AS A FUNCTION OF INSTRUCTIONAL ARRANGEMENTS

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Abstract

This paper integrates results from three studies that examined students' academic responding time in different instructional arrangements: (1) high, middle, and low reading group placement, (2) regular and resource room placement, and (3) special education service level placement. Second, third, and fourth grade regular education and learning disabled students were observed for two consecutive days using a comprehensive 10-second interval time sampling technique to describe the instructional context and student responding for a target student.

The nature of instruction and student responding for students in different instructional arrangements is more similar than different. Significant outcomes of these studies were the documentation of the small amount of time spent by all students in active academic responses and the considerable variability that existed between individual students regardless of the instructional placement.

Despite differences in the nature of instruction there are no differences in total academic responding time of LD students in the resource room and non-LD students in mainstream classes, for students in high, middle, or low reading groups, or for students in different service delivery levels. Instruction received by LD students in resource rooms and in mainstream classrooms differed in several ways, including the student's active academic response. The results are interpreted with reference to principles of effective instruction.

Academic Engaged Time as a Function of Instructional Arrangements

It is no secret that many students experience academic or behavioral difficulties in schools or perform less well than desired by teachers. The pervasive concern about declining academic performance and standards is articulated in A Nation at Risk (National Commission on Excellence in Education, 1983). As a result of this concern, educational research in the past decade has focused on time-based variables or instructional effectiveness. Time-based research has studied how time is spent in the classroom -- how teachers allocate time, what tasks and materials are used, and in what types of responses individual students are engaged. This area of study has been called "academic engaged time," "academic learning time" (Fisher, Berliner, Filby, Marliave, Cohen, & Dishaw, 1980), "opportunity to learn," or "academic responding time" (Hall, Delquadri, Greenwood, & Thurston, 1980). The study of academic responding time has been directed at investigating the extent to which, and during which instructional contexts, students are engaged academically. It is argued that perhaps some children have academic difficulty because they have not had sufficient opportunity to practice academic skills (Hall et al., 1980).

A goal of education is to maximize achievement for all students. One of the many decisions teachers make to influence positive academic outcomes is how to group students for instruction. In addition, child study team members make special education placement decisions for those students experiencing academic or behavioral difficulties in mainstream classes. In part, these decisions are made to provide

greater opportunity to learn. Information on how instruction and academic engaged time differ for regular and special education students as a function of different placements has important implications for influencing academic outcomes for students.

This paper presents data from three investigations on the nature of the instructional ecology (i.e., time allocated to activities, instructional tasks, teaching structures, teacher location and teacher activity) and the actual engaged responses of elementary students in different instructional arrangements. Specifically, this paper describes the extent to which instruction and academic responding time:

- differ for regular education students as a function of placement in high, middle and low reading groups (Study 1)
- differ for LD students in the resource room and mainstream classroom (Study 2)
- differ for LD students as a function of different levels of special education service (Study 3)

Following a description of subjects, the observational methodology, and procedures used in the three investigations, the results are integrated and discussed in reference to the instructional effectiveness literature.

Method

Subjects

Subjects in the three investigations were from two metropolitan midwestern school districts. All teachers and students were volunteer

participants in each observational study. All subjects were randomly selected.

Twenty-seven second-grade students (16 male, 11 female) from 10 elementary schools served as subjects in Study 1. Eight pairs of LD and non-LD students (five pairs males, three pairs females) from eight third and fourth grade classrooms in eight schools served as subjects in Study 2. The LD students received resource room instruction ranging from 30 minutes per day to 225 minutes per day. Twenty-six students (17 male, 9 female) from 25 third and fourth grade classrooms in 11 elementary schools served as subjects in Study 3.

The five levels of LD service in Study 3 were defined in terms of the amount of specialized help received by the student. Level 1 students received indirect LD specialist help in the form of follow-up monitoring and perhaps some consultation between the LD teacher and the regular classroom teacher. Level 1 students did not leave the regular classroom for services. Level 2 students received more direct help from the LD specialist, but still only within the regular classroom. The LD teacher provided the regular classroom teacher with special support services for the student or sometimes entered the regular classroom to provide the student with special tutoring for a small amount of time. Level 3 students received special LD services outside of the regular classroom for part of the day (up to 1/2 day, or 3 hours). Level 4 students received special LD services outside of the regular classroom for more than half of the day. Level 5 students received all instruction within a special LD classroom. It was

assumed that the level in which a particular student received services reflected the severity of the student's learning disability or the degree of learning impairment evidenced by the student; the higher the number of the level in which the student received services, the greater the severity of the student's learning disability. Twenty-three students received LD services at Levels 1-4; three students were in a Level 5 placement.

Observation System

The CISSAR (Code for Instructional Structure and Student Academic Response) observation system was used in each investigation. The version of the system employed was developed by the Juniper Gardens Children's Project in Kansas City, Kansas (Greenwood, Delquadri, & Hall, 1978). The system focused the observation on the behavior of one target student (rather than sampling behaviors of several students) and allowed observers to record six event areas: (a) activity (12 codes), (b) task (8 codes), (c) teaching structure (3 codes), (d) teacher location (6 codes), (e) teacher activity (5 codes), and (f) student response (7 academic, 5 task management, and 7 inappropriate behavior codes). Students' total active academic responding is defined by the amount of time engaged in making the 7 academic responses. Attending to task is considered a passive response and is included in the task management composite. Table 1 is a list of the definitions of the event areas and the specific events recorded within each area. A total of 53 different events could be recorded with the CISSAR system.

Insert Table 1 About Here

An interval time sampling technique was used to direct the recording of events. Three event areas were recorded every 10 seconds over the entire observation session. Coding was structured into blocks of seven 10-second intervals. During the first 10-second interval, activity, task, and teaching structure were recorded. During each of the next six 10-second intervals, teacher position, teacher activity, and student response were recorded. This pattern was maintained throughout the observation.

An auditory electronic timer attached to a clipboard was used to signal the 10-second intervals. The timer was equipped with an earplug so that only the observer could hear the signal (a short beep sound). The clipboard was used to hold coding sheets and to provide a hard surface for marking events.

Procedures

Two weeks of half-day training sessions for observers were required to cover the CISSAR system using the Observer and Trainer's Manual (Stanley & Greenwood, 1980). This was followed by two to three days of practice coding within actual classrooms. The same 10 observers collected data in each of the three investigations.

For the three investigations, target students were observed for two consecutive days each. In Study 1 (reading group differences) the target student was observed during the two hours designated for

second grade reading instruction by the school district, whereas the target student was observed all day in Study 2 (regular or resource placement) and Study 3 (levels of service). In Studies 2 and 3, the trained educational observers coded activities on either a whole-day (one observer all day) or half-day (one observer for morning, another for afternoon) basis. Typically, observers did not code continuously for a period of more than two hours because of breaks within the school day. Observations were not conducted during breaks, such as those for lunch, recess, and bathroom. Also, observers did not code during physical education, music, or special assembly programs since the observation system did not apply to these situations. Observers did follow target students when they left their homerooms to go to other classrooms for certain subjects (typically reading and/or mathematics), or when they went to the resource teacher for special instruction. Coding was conducted in these other classrooms in the same manner as in homerooms. Regardless of the physical setting, observers attempted to position themselves to be unobtrusive and to avoid revealing the identity of target students to the target students themselves or to other students.

Data collection procedures for Study 2 (regular or resource placement) require further description due to the matching of LD and non-LD pairs. The purpose of this study was to compare the nature of instruction and academic responding time for LD students in the mainstream classroom and in the resource room. Most of the LD students received LD services during the time scheduled for mainstream

reading instruction. Since academic engaged time was found to be the highest during reading instruction (Graden, Thurlow, & Ysseldyke, 1983), a non-LD classmate of each LD student also was observed in the regular classroom during the same time period (an average of 95 minutes per day) to ensure that any engaged time differences were due to the resource room placement and not a function of the content area. Student pairs (LD and non-LD) always were observed on the same days.

Reliability was checked during each investigation. Semi-monthly meetings were held to discuss coding problems and reliability disagreements and to maintain the recommended reliability of .85. Observers were kept blind as to the reading group classification or level of service of each LD student.

Results

The instructional ecology (type of activity, task, teaching structure, teacher location and teacher activity) and student response (academic, task management, and inappropriate behavior) for regular education students in different reading groups (Study 1), LD students in regular or resource room placements (Study 2), and LD students in different levels of special education service (Study 3) are each summarized. Generalizations across the three studies appear in the discussion.

Study 1 (Reading Group Differences). The major findings of this study regarding differences in instruction among students in high, middle, and low reading groups revealed that in most respects, reading groups were more similar than different. High, middle, and low

reading groups did not differ significantly in time allocated to reading, or in the majority of materials used, teacher locations, or teacher activities. The major differences between reading groups were that the low reading groups received more individual instruction, F (2,24) = 4.69, p = .020, and more teacher approval, F (2,24) = 5.19, p = .013, while the middle and high reading groups received more small group instruction, F (2,24) = 5.68, p = .008, and more time during which no response was directed to them, F (2,24) = 7.22, p = .004 (see Table 2). Additionally, reading groups differed in total time allocated to academic activities, F (2,24) = 3.73, p = .039, with middle reading groups receiving the most allocated academic time (excludes arts/crafts, free time, class business/management, transition, can't tell) and low reading groups receiving the least.

Insert Table 2 About Here

Yet, few differences emerged in the actual academic responses of students; middle group students engaged in more writing, F (2,24) = 4.09, p = .030, while low group students engaged in more reading aloud F (2,24) = 8.19, p .002 (but only about 2½ minutes total). For all other types of student responding, including all types of task management and inappropriate responding, students in different reading groups did not differ significantly. Of 19 student responses, differences emerged in only two academic responses. Additionally, students in different reading groups did not differ significantly in

amount of time engaged in each of the three composite categories of student responding (academic, task management, or inappropriate behavior).

An important outcome of this study was the documentation of the small amount of time spent by all reading groups in active reading responses. Of the 120 minutes of scheduled reading time, about 81 minutes were actually allocated to reading instruction. Of this, only for about 20 minutes were students actually engaged in all academic responses, with only 10 minutes in reading responses (8 minutes in silent reading, 2 minutes in oral reading). In contrast, over 40 minutes of this reading period were spent engaged in task management or waiting responses.

Another striking finding was the considerable variability that existed between individual students in different aspects of reading instruction. For example, the time allocated to reading for individual students ranged from a low of 35 minutes to a high of 107 minutes, time engaged in silent reading ranged from only 36 seconds for one student to 26 minutes for another student, and time engaged in oral reading ranged from zero minutes for one student to 8 minutes for another student.

Study 2 (Regular or Resource Placement). The instructional ecology for LD students in regular and resource classrooms differed (see Table 3). Proportionately, LD students were allocated more small group instruction, t (7) = 3.52, p = .010, and more teacher approval, t (7) = 2.80, p = .027, in the resource room than in the mainstream

classroom. In contrast, proportionately more time was allocated to entire group structure, t (7) = 5.84, p = .001, and other talk, t (7) = 3.31, p = .013, in the mainstream classroom than in the resource room.

Insert Table 3 About Here

These differences in the nature of instruction in the two settings appeared to have influenced the LD students' responses. The proportion of time during which the LD student engaged in task management responses, specifically raising hands, was significantly greater in the mainstream classroom than in the resource room, t (7) = 2.84, p = .025. In contrast, the proportion of time during which the LD student engaged in active academic responses, t (7) = 4.27, p = .004, specifically academic talk, t (7) = 2.93, p = .022, and answering academic questions, t (7) = 3.38, p = .012, was significantly greater in the resource room than in the mainstream classroom. No significant differences were found in the percentages of time allocated to various tasks or teacher locations for LD students during their times in regular and resource classrooms. In both settings, the largest percentages of time were allocated to readers and other media; the teacher was most often located among the students.

Regarding the above comparisons favoring the resource room setting for the LD student, it must be noted that in the resource

classroom the LD students were working on reading and/or math. Since different academic activities are likely to promote different student responses, it was necessary to compare the nature of instruction and responding times of LD students with those of non-LD classmates during the time the LD student was in the resource room. When the activity was the same in the two settings, there were differences in the instructional context. During reading and/or math, LD students in the resource room were allocated significantly more time for individual instruction (34 min vs 1.3 min), t (14) = 2.49, p = .026, with the teacher located beside them (14.3 min vs 30 sec), t (14) = 2.68, p = .018, and received significantly more teacher approval (30 sec vs 6 sec), t (14) = 2.44, p = .028, than did non-LD students in the regular classroom during reading and/or math.

In terms of student responding, both groups were engaged in task management responses for the largest amount of time; active academic responses accounted for not quite one-half hour of the observed time. LD and non-LD students did not differ in the amount of time during which they were engaged in active academic responses overall, however, this finding contradicts the significant difference in LD students' academic responding time when they are in resource or regular classrooms. LD students in the resource room spent more time than non-LD students in the regular classroom engaged in four specific active academic responses: reading aloud (5 min vs 40 sec), t (14) = 2.20, p = .045; academic talk (4 min vs 40 sec), t (14) = 2.54, p = .023; playing academic games (4 min vs 0 min), t (14) = 2.90;

p = .012; and asking academic questions (40 sec vs 10 sec), t (14) = 2.49, p = .026. Students engaged in inappropriate responses for approximately 10 minutes, regardless of their classification as LD or non-LD.

In the present study, active academic responding was low and variability among students was great. Active academic responding during reading and/or math occurred for an average of 29.4 minutes for LD students in the resource room and 25.6 minutes for non-LD students in the regular classroom, or about 28% of the 95 minutes of observed time. LD students engaged in specific reading practice (reading aloud or silently) for only 9.0 minutes during this time; non-LD students engaged in these responses for 10.6 minutes during the same time. One LD student spent an average of just 1.8 minutes per day reading aloud or silently while another spent an average of 23.6 minutes; one non-LD student spent an average of just 20 seconds per day reading aloud or silently while another spent an average of 20.0 minutes.

Study 3 (Levels of Service). Some differences in the instructional ecology were found for LD students receiving different levels of service. In general, less severely learning disabled students (Levels 2 and 3) were allocated more time for academic activities, F (4,21) = 5.11, p = .005, than were more severely disabled students (Level 5). Less severely disabled students (Levels 1-3) spent more time in entire group structures, F (4,21) = 6.57, p = .001. More severely disabled students (Level 4) were allocated more individual instruction than students in all other levels, F (4,21) =

5.96, p = .002. Times in individual structures increased from Level 1 to Level 4 but declined at Level 5 (see Table 4).

Insert Table 4 About Here

In examining students' responses as a function of level of service, fewer differences were found. Significant differences between time spent in various student responses by Level 1-5 LD students emerged for only one of the 19 student responses. Less severely disabled students (Level 1) spent more time looking around than more severely disabled students (Levels 4 and 5), F (4,21) = 3.72, p = .019. Differences found for the inappropriate student response composite, F (4,21) = 3.42, p = .026, revealed that Level 2 students spent more time making inappropriate responses (about 45 minutes) than did students in Level 5 (about 15 minutes per day).

As in the other studies, a striking finding was the small amount of active academic responding time for all students, regardless of level of service. Academic responding averaged about 43 minutes per day (25% of students total responding time), task management responses accounted for 95 minutes (55%), and inappropriate responses accounted for 30 minutes (almost 20%). Variability among individual students remained great even within service levels. For example, in Level 3, one student engaged in reading aloud for 16.4 minutes per day while another spent no time reading aloud. In Level 5, where students were in a special classroom all day, reading aloud time ranged from 4.0 miniutes to 9.4 minutes per day.

Discussion

A summary of significant differences for the nature of instruction and active academic responding across the three investigations is presented in Table 5. The nature of instruction and student responding for regular education and learning disabled students in different instructional arrangements is more similar than different. What have we learned about students' academic responding time?

Insert Table 5 About Here

First, the most important outcome of these studies was the documentation of the small amount of time spent by all students -- regular education and learning disabled -- in active academic responses. Most time was devoted to task management responses (includes passive responding such as wait or attending) regardless of reading group or special education placement. Across the three studies, active academic responses accounted for only 25% of students' total responding time, while task management responses accounted for about 50%. For example, of the 81 minutes actually allocated to reading instruction (in Study 1), students were actually engaged in all academic responses for 20 minutes, with only about 10 minutes in reading responses (8 minutes reading silently, 2 minutes reading aloud). These average times become striking when totaled over a typical school year. At this daily rate, students will spend 109

hours of reading time engaged in task management behaviors in a school year and only 21 hours reading silently and 5 hours reading aloud (assuming same rate across the school year). The low amount of time spent engaged in active academic responses is particularly disturbing in light of many findings in the instructional effectiveness literature (e.g., Rosenshine & Stevens, 1985). The use of direct instruction principles in which students are involved in substantive teacher-student interaction has been found to facilitate positive academic outcomes, particularly for low achieving students.

Another striking finding was the considerable variability that existed between individual students regardless of their instructional placement. When daily differences in student engagement rates in reading are summed over the course of the school year, the student who read 26 minutes in one day would read 68 more hours than the student who read 36 seconds (assuming initial differences continued at the same rate). This finding has particular significance for teachers' instructional planning and classroom management practices (e.g., Anderson, 1984; Karweit, 1983).

Third, despite some differences in the nature of instruction, students' academic responding time was generally similar. Time spent in making active academic responses for students in different instructional placements was similar with the exception of the regular vs resource classroom placement (based on 8 LD and non-LD pairs). The LD students spent significantly more time engaged in responses characteristic of direct instruction, including discussing academics,

asking and answering academic questions, and playing academic games in resource classrooms. Instruction in the resource classroom when compared to the regular classroom was characterized by greater amounts of individual instruction with the teacher beside the LD student. This physical setting may be very conducive to increased time spent in these teacher-student interaction responses. Despite changes in LD students' academic response (apparently derived from resource room instruction), one must question whether the low amount of academic responding time is sufficient for improving the skills of LD students. A critical question, yet unanswered, is "how much academic responding time is enough?" Quantity of time is a necessary but not sufficient component of effective instruction for a student. Due to the extensive variability among individual students in all three investigations, we question whether the quantity of time is sufficient for many students. We believe there needs to be enough quantity in order to have quality instruction; in a sense, quantity is a pre-requisite to quality.

In closing, we have learned that students' academic responding time is low; it represents a small proportion of the total school day. We have learned that some students make more active academic responses than other students. In part, this may be a function of the teaching structure, the way instruction was planned or the way the class is managed. We know that academic engaged time is, at best, a moderate predictor of achievement (Good, 1983; Karweit, 1983). The importance of active student involvement continues to have logical appeal and

empirical support; however, it clearly is not the sole factor for producing positive academic outcomes for students. As educators we must be concerned both with the quantity of academic engaged time and the qualitative nature of instruction for individual students. A critical finding in Study 1 (reading group difference) and Study 2 (regular or resource placement) highlights this point. It seems to us that the significant difference between groups in the amount of teacher approval received is very secondary to the low amount of teacher approval, particularly, that task-specific praise is a positive correlate of academic achievement (Good & Brophy, 1984).

Recent research at the University of Minnesota (Instructional Alternatives Project, directed by James E. Ysseldyke) is documenting the quantity of academic engaged time and qualitative nature of instruction (e.g., instructional planning, feedback, expectations, success rate) for regular and special education, second, third, and fourth graders. The long range goal of the project is to assess the effectiveness of alternative interventions for increasing students' academic engaged time. In this endeavor, we may find that academic engaged time (i.e., academic responding time) is really just one component of instructional effectiveness.

References

Anderson, L. W. (1984). Instruction and time-on-task: A review. In L. W. Anderson (Ed.), Time and school learning. New York: St. Martin's Press, 143-163.

Fisher, C. W., Berliner, D. C., Filby, N. N., Marliove, R., Cohen, L. S., & Dishow, M. M. (1980). Teaching behaviors, academic learning time, and student achievement: An overview. In C. Denham & A. Lieberman (Eds.), Time to learn. Washington, DC: National Institute for Education.

Good, T. L. (1983). Classroom research: A decade of progress. Educational Psychologist, 18(3), 127-144.

Good, T. L., & Brophy, J. E. (1984). Looking in classrooms. New York: Harper & Row.

Graden, J., Thurlow, M. & Ysseldyke, J. (1983). Instructional ecology and academic responding time for students at three levels of teacher-perceived behavioral competence. Journal of Experimental Child Psychology, 36, 241-256.

Greenwood, C. R., Delquadri, J., & Hall, R. V. (1978). Code for instructional structure and student academic response: CISSAR. Kansas City, KS: Juniper Gardens Children's Project, Bureau of Child Research, University of Kansas.

Hall, R. V., Delquadri, J., Greenwood, C. R., & Thurston, L. (1980). The importance of opportunity to respond to children's academic success. Unpublished manuscript, Juniper Gardens Children's Project, University of Kansas.

Karweit, N. L. (1983). Time on task: A research review. Baltimore, MD: Center for Social Organization of Schools, John Hopkins Univeristy.

Rosenshine, B., & Stevens, R. (1985). Teaching functions. In M. C. Wittrock (Ed.), Handbook of research on teaching (3rd ed.). New York: MacMillan, 376-391.

Stanley, S. O., & Greenwood, C. R. (1980). CISSAR: Code for instructional structure and student academic responses: Observer's manual. Kansas City, KS: Juniper Gardens Children's Project, Bureau of Child Research, University of Kansas.

The National Commission on Excellence in Education. (1983). A nation at risk: The imperative for educational reform. U.S. Department of Education.

Table 1

CISSAR Event Areas and Specific Events Coded[a]

Event Area	Specific Events Coded
Activity - type of instruction being provided/established by teacher	R - Reading M - Math S - Spelling H - Handwriting L - Language Sc - Science Ss - Social Studies Ac - Arts/Crafts Ft - Free Time Bm - Class Business/ Mangement Tn - Transition Ct - Can't Tell
Task - curriculum task or verbal instruction mode in which student is expected to engage	Rr - Readers Wb - Workbooks Ws - Worksheets Pp - Paper and pencil Ll - Listen to Teacher Lecture Om - Other Media Tsd - Teacher-Student Discussion Fp - Fetch/Put Away
Teaching Structure - physical arrangement of student in class	Eg - Entire Group Sg - Small Group I - Individual
Teacher Location - location of teacher	IF - In Front of Class AD - At Desk AS - Among Students O - Out of Room S - Side B - Back
Teacher Activity - response of teacher to target student	NR - No Response T - Teaching OT - Other Talk A - Approval D - Disapproval
Student Response - behavior in which student is engaged	Academic Composite: W - Writing G - Playing Academic Game RA - Reading Aloud RS - Silent Reading TA - Talking About Academics ANQ - Answers Academic Question ASK - Asks Academic Question Task Management Composite: AT - Passive Response RH - Raising Hand LM - Looking for Materials M - Moves to New Academic Station PA - Play Appropriate Inappropriate Behavior Composite: DI - Disruptive PI - Play Inappropriate IT - Inappropriate Task TNA - Talking About Non-academics IL - Inappropriate Locale LA - Look Around SST - Self Stimulation

[a]Based on Stanley & Greenwood's (1980) CISSAR: Code for instructional structure and student academic response: Observer's manual. Within the Student Response Event Area, the AT event, which was designated as "Attending" by Stanley and Greenwood, was renamed as "Passive Response" in the present investigation to avoid inappropriate connotations of the response included within the event.

Table 2

Summary of Significant Differences at Three Reading Levels[a]

Observational Category	High		Middle		Low		Sig. Level[b]
	$\bar{X}$	%	$\bar{X}$	%	$\bar{X}$	%	
Instructional Ecology							
Activity							
Academic Composite[c]	86.1	97.3	93.7	96.8	73.2	91.7	.039
Task							
Listen to Lecture	1.2	1.4	0.6	0.6	0.1	0.1	.026
Structure							
Small Group	73.1	82.9	79.7	82.5	42.6	53.3	.008
Individual	3.0	3.4	0.5	0.5	22.6	28.3	.020
Teacher Location							
Beside Student	1.2	1.6	1.0	1.2	10.9	16.3	.010
Teacher Activity							
No Response	55.0	75.0	63.4	77.9	42.7	63.6	.004
Approval[d]	0.2	0.3	0.1	0.1	0.5	0.7	.013
Student Response							
Writing	8.6	11.7	10.1	12.4	5.2	7.8	.030
Read Aloud	0.9	1.2	0.4	0.5	2.4	3.6	.002

[a]Entries are mean numbers of minutes, and percentages of total minutes for one day, based on nine students in each group.

[b]Significance levels are from one-way ANOVAs on the mean times over two days.

[c]Academic composite includes reading, math, spelling, handwriting, language, sciences, and social studies.

[d]The amount of teacher approval was small for all groups (less than 30 seconds).

Table 3

Summary of Significant Differences in Regular and Resource Classrooms for LD Students[a]

Observational Category	Regular	Resource	Sig. Level[b]
Instructional Ecology			
Activity			
Reading	5.6	75.2	.000
Social Studies	9.7	0.3	.023
Spelling	6.8	0.9	.022
Transition	6.1	2.4	.006
Business Management	5.7	0.1	.006
Structure			
Entire Group	93.5	22.0	.001
Small Group	3.5	48.3	.010
Teacher Activity			
Other Talk	3.2	1.6	.013
Approval	0.1	0.6	.027
Student Response			
Academic Composite	16.4	36.9	.004
Talk Academic	2.2	4.6	.022
Asks Academic Question	0.2	1.5	.012
Task Management Composite	60.8	48.5	.025
Raise Hand	2.8	1.5	.033

[a]Percentages are averages within each type of classroom based on observation of eight students for two days each.

[b]Significance levels are from dependent *t* tests (df = 7).

Table 4

Summary of Significant Differences for LD Students in Five Service Levels[a]

Observational Category	1		2		3		4		5		Sig. Level[b]
	$\bar{X}$	%	$\bar{X}$	%	$\bar{X}$	%	$\bar{X}$	%	$\bar{X}$	%	
Instructional Ecology											
Activity											
Math	41.4	20.5	52.7	22.7	40.5	18.7	43.4	21.7	22.8	13.5	.012
Academic Composite[c]	158.7	78.6	190.1	81.8	186.2	86.1	165.2	82.7	133.7	79.4	.005
Structure											
Entire Group	128.2	63.5	181.6	78.2	152.6	70.4	56.7	28.2	86.6	51.4	.001
Individual	14.6	7.2	24.5	10.5	29.8	13.7	86.8	43.2	15.4	9.2	.002
Student Response											
Inappropriate Behavior Composite[d]	37.2	22.2	46.2	23.8	29.2	16.2	29.1	17.5	15.7	11.3	.026
Look Around	24.3	14.5	20.0	10.3	15.6	8.7	9.6	5.8	9.7	7.0	.019

[a]Entries are mean numbers of minutes, and percentages of total minutes for one day, based on three students each in Levels 1, 2, 4, and 5, and 14 students in Level 3.

[b]Significance levels are from one-way ANOVAs (df = 4,21).

[c]Academic composite includes reading, math, spelling, handwriting, language, science, and social studies.

[d]Inappropriate behavior composite includes disruptive, play inappropriate, inappropriate task, talking about nonacademics, inappropriate locale, look around, and self-stimulation.

Table 5

Summary of Instructional and Student Responding Differences Across Three Investigations[a]

Observational Category	Regular Education	LD Students	
	Reading Group (N=27)	Resource or Regular (N=8)	Levels of Service (N=26)
Instructional Ecology			
Activity	+	+	+
Task	+	-	-
Structure	+	+	+
Teacher Location	+	-	-
Teacher Activity	+	+	-
Student Response			
Academic Composite[b]	-	+	-
Task Management Composite[c]	-	+	-
Inappropriate Behavior Composite[d]	-	-	+

[a]Entries indicate presence of at least one significant difference (+) or the absence of any significant differences (-).

[b]Within the academic composite (writing, playing academic game, reading aloud, silent reading, talking about academics, answers and asks academic question), significant differences were found between the reading groups for the two specific acadmeic responses of writing and read aloud. LD and non-LD students' academic responding time did not differ significantly.

[c]Task management composite includes passive response, raising hand, looking for materials, move to new academic station, and play appropriate.

[d]Inappropriate behavior composite includes disruptive, play inappropriate, inappropriate task, talking about nonacademics, inappropriate locale, look around, and self-stimulation.